

ABSTRACT

An electrical overvoltage protection circuit in a dual voltage electrical distribution system such as a motor vehicle includes a PTC device in series between a low voltage source and a low voltage distribution wire, and also a voltage limiting circuit element such as a zener diode in thermal contact with the PTC device and connected across the low voltage distribution wire and a common electrical return path. The voltage limit is set to be below a high voltage and above the low voltage. When the low voltage distribution wire becomes cross-connected to a high voltage distribution wire, the voltage limiting circuit element conducts a large current and generates heat which is transferred to the PTC device which thereupon trips and limits current flow from the low voltage source to the high voltage load via the cross-connected low voltage and high voltage distribution wires.